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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,198	07/03/2003	Linlin Xing	P00704-US1	4573
3017	7590	02/16/2005	EXAMINER	
BARLOW, JOSEPHS & HOLMES, LTD. 101 DYER STREET 5TH FLOOR PROVIDENCE, RI 02903			FLETCHER III, WILLIAM P	
			ART UNIT	PAPER NUMBER
			1762	

DATE MAILED: 02/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/613,198

Applicant(s)

XING ET AL.

Examiner

William P. Fletcher III

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13 is/are allowed.
- 6) ☒ Claim(s) 1,3,6 and 10-12 is/are rejected.
- 7) ☒ Claim(s) 2,4,5 and 7-9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. Receipt is acknowledged of applicant's amendment and response filed 12/8/2004. Claims 1-13 remain pending.

***Response to Arguments***

2. Applicant's arguments in the above-mentioned response, with respect to the objection to the specification, have been fully considered and are persuasive. Since applicant has amended the specification to update the status of the related application, the objection is withdrawn.
3. Applicant's arguments in the above-mentioned response, with respect to the rejection(s) of claim(s) 1-13 under 35 U.S.C. 103(a), have been fully considered and are persuasive. Applicant amended the claims to recite a 'freshly irradiated coating.' From applicant's disclosure at pages 17-19 of the specification, a 'freshly irradiated coating' is interpreted as being any radiation-curable coating that has been subjected to irradiation such that it is partially-cured, but not fully-cured. Because the rejections cited in the prior Office action teach fully curing the coating, these rejections are withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Nakayama et al. (US 5,942,329 A) below.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

**5. Claims 1, 3, 6, 10, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. (US 5,942,329 A) in view of DeClercq et al. (US 5,672,392 A).**

In Nakayama, reference is made to abstract; 1:5-10; 9:60-11:25; 13:60-14:35, especially 14:23-30; 15:37-35; 17:31-33; Examples; and Table 1.

Nakayama teaches a process for making an ink-jet recording medium. In a particular embodiment, both the surface of a substrate sheet and a casting base are coated with the same or similar radiation-curable coating compositions. These radiation-curable compositions are partially-cured by exposure to electron-beam radiation. As noted above, such partial curing reads on a 'freshly irradiated coating.' The two coatings are brought into contact with one-another, fully cured, and then separated from the casting base. This process results in a substrate over-coated with two radiation-curable coatings, the outermost coating serving as an ink-receptive coating (i.e., it is printed on). The examiner notes that applicant's transitional language 'comprising' makes the claim open to any and all additional steps other than those recited in the claim, including the step(s) associated with providing the ink-receptive coating on a casting base and laminating it to the coated substrate sheet. Lastly, Nakayama explicitly teaches the desirability of gloss values greater than 75, but also discloses a specific value of 60, which falls within the range recited by applicant in claim 12.

The examiner notes that Nakayama is silent with respect to the water vapor transmission properties of the ink-jet recording medium produces according to this process. According to pages 10-11 of the specification, the water vapor transmission rate is a physical property of the radiation-cured layer underlying the ink-receptive coating layer. The low water-vapor

Art Unit: 1762

permeability of the radiation-cured layer serving to prevent migration of water (vapor) from the overlying ink-receptive coating to the underlying substrate sheet. Applicant discloses many of the same radiation-curable coating compositions as taught by Nakayama (see 9:60-11:25). It is the examiner's position that, since Nakayama teaches that the same radiation-curable coating compositions as disclosed by applicant may be deposited according to a process that reads on applicant's claimed process, the water vapor transmission rate of the radiation-cured layer in the ink-jet recording medium of Nakayama is, absent clear and convincing argument or evidence to the contrary, the same as that claimed by applicant.

This reference teaches the production of a single-sheet, but does not explicitly teach that the process is a continuous, in-line one.

As an initial point, the examiner notes that it is well-settled that it is within the level of ordinary skill in the art to operate a process continuously. *In re Dilnot* 138 USPQ 248 (CCPA 1963); *In re Korpi* 73 USPQ 229 (CCPA 1947); *In re Lincoln* 53 USPQ 40 (CCPA 1942). Further, the examiner notes that it is well-settled that it is not inventive to broadly provide a mechanical or automatic means to replace manual activity which has accomplished the same results. *In re Venner and Bowser*, 120 USPQ 192 (CCPA 1958). Nevertheless, DeClercq teaches that coatings may be applied to a substrate using in-line application machines to yield an ink-jet recording medium (6:41-50).

It would have been obvious to one of ordinary skill in the art to modify the process of Nakayama so as to carry-out the coating process as a continuous, automated process, using in-line application machines, as suggested by DeClercq. One of ordinary skill in the art would have

Art Unit: 1762

been motivated to do so by the desire and expectation of reduced manpower, time, and cost attendant the automation of such a process using coating machines known in the art.

With specific respect to claim 6, neither of the cited references teaches that the continuous, in-line process runs at a speed of at least about 60 feet per minute. It is the examiner's position that the speed at which a continuous, in-line coating line is run is a result-effective variable effecting the coating speed, coverage, and quality, as well as the overall processing efficiency. Absent clear and convincing evidence of unexpected results demonstrating the criticality of the claimed line speed, it would have been obvious to one of ordinary skill in the art to modify the process of Nakayama in view of DeClercq so as to optimize this result-effective variable by routine experimentation (see MPEP § 2144.05).

With specific respect to claims 10 and 11, Nakayama teaches that the coverage of both coatings is present in a total amount of 3 to 60 grams/square meter (15:37-46).

***Allowable Subject Matter***

6. Claim 13 is allowed.
7. Claims 2, 4, 5, and 7-9 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter:

With respect to claim 13, Nakayama does not explicitly disclose a gloss value within the claimed range and, further, explicitly teaches away from the claimed gloss value, citing the desirability of a gloss greater-than-or-equal-to 75. Consequently, the prior art neither teaches nor

Art Unit: 1762

suggests the claimed process in which the ink-jet recording medium has a surface gloss less than 20.

With respect to claims 2 and 7, Nakayama teaches only electron-beam curing and cites the criticality of the particular e-beam curable compositions as crucial to achieving the desired gloss (20:20-25). Consequently, the prior art neither teaches nor suggests the claimed process in which the radiation-curable coating composition is UV-curable or contains the attendant photo-initiators.

With respect to claims 4 and 5, Nakayama discloses that, because the compositions of the two coating layers are either the same or similar, high adhesion is achieved (12:27-33). Consequently, Nakayama teaches away from the claimed process in which these common adhesion promoting steps are performed.

With respect to claims 8 and 9, Nakayama teaches solvent-based compositions and, consequently, neither teaches nor suggests the claimed water-based compositions.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

Art Unit: 1762

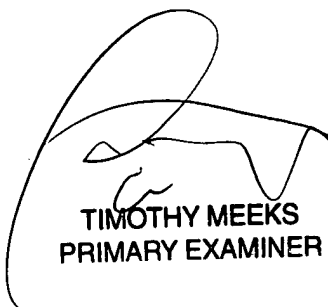
CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William P. Fletcher III whose telephone number is (571) 272-1419. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*WPF 2/9/2006*  
William P. Fletcher III  
Examiner  
Art Unit 1762

  
TIMOTHY MEEKS  
PRIMARY EXAMINER